

Watershed Connections

Delivering News from the Carson River Watershed Community

Photo by Debbie Neddenriep

Winter 2015-16 - Will El Niño Deliver to the Carson River?

By Chris Smallcomb, NOAA National Weather Service Reno

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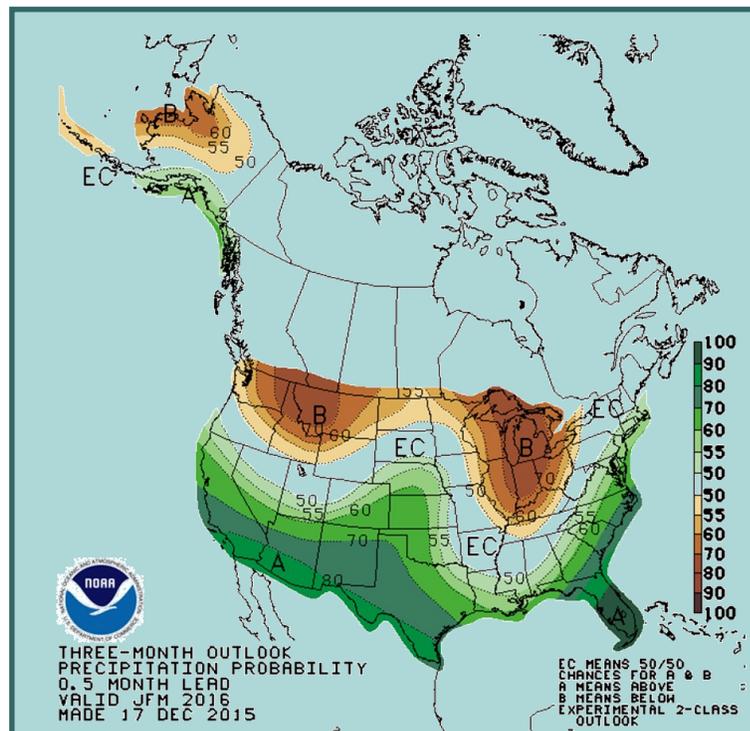


It's been the talk of the region since summer - will a strong El Niño finally break the cycle of drought? Well, we are now into the core months of winter, December through March, during which we typically get about 70% of our annual precipitation. Thus far we have had some solid winter storms including lake effects, but most of those storms have come from the northwest or north without a solid fetch of Pacific Ocean moisture to scoop up. Therefore these storms have yielded generally colder, lower liquid-water-content snows with a mixed benefit to Sierra snowpack. Some spots are doing well, including the Carson River headwaters. Other regions in the Sierra are below normal.

The latest winter outlook from the NOAA Climate Prediction Center favors above normal precipitation in the Sierra for this winter. This is consistent with recent NOAA research into how strong El Niño events impact California and western Nevada. But to get a good snowpack for water supply we need generally cold storms, and previous similar strong El Niño winters have been either cold or warm. Therefore it is hard to say if this year's El Niño will result in a beneficial snowpack for the Carson River area.

There has also been recent research from USGS

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The latest precipitation outlook for January- March from the NOAA Climate Prediction Center. Based on statistics and global atmospheric/oceanic simulations - the green shaded areas favor above normal precipitation. The darker the shading, the higher the confidence in that outcome. Image courtesy of Chris Smallcomb, NOAA National Weather Service Reno.

Myths and Facts about the National Flood Insurance Program

Excerpts from Federal Emergency Management Agency Publication

Everyone lives in a flood zone. In high-risk areas, there is a 1 in 4 chance of experiencing a flood over the life of a 30 year mortgage. Floods are the most common natural disaster in the United States. It doesn't take a major body of water, or even a major storm, to cause a flood. Anything from new development to a slow moving rainstorm can cause flooding. Nearly 25% of flood insurance claims come from moderate to low-risk areas.

A common misconception is that you don't need flood insurance because Federal disaster assistance will come to your aid. Floods are not always declared a Federal disaster. If they are, aid usually comes in the form of a loan, which must be paid back. Just a few inches of water can cost thousands of dollars in damage to walls, floors, furniture, carpet, and appliances. Having flood insurance can help you avoid the financial consequences of a flood. The cost of a flood insurance policy depends on your flood risk. For all but a small percentage of very high risk properties, flood insurance is surprisingly affordable. If your property is in a moderate to low-risk area, you may qualify for a Preferred Risk Policy for as little as \$167 a year.



A house is flooded in Dayton Valley during the 2005-2006 flooding.
Photo by Shannon Watermolen, courtesy of USGS.

Below are some common myths and facts about flood insurance:

MYTH: Homeowners insurance policies cover flooding.

FACT: Standard homeowners insurance does not cover flooding. In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed Federal Emergency Management Agency requirements to reduce the risk of flooding.

MYTH: National flood insurance can only be purchased through the NFIP directly.

FACT: NFIP flood insurance is sold through private insurance companies and agents, and is backed by the federal government. Rates are set nationally and do not differ from company to company or agent to agent. These rates depend on many factors, which include the date and type of construction of your home, along with your building's level of risk.

MYTH: Flood insurance covers every part of your property that is affected by flooding.

FACT: Flood insurance protects two types of insurable property: building and contents. The first covers your building, the latter covers your possessions; **neither covers the land they occupy, including landscaping.**

If you wait until a flood is on its way, you will be too late. In most cases, it takes 30 days after purchase for a policy to take effect. To assess your flood risk, find an agent, and get more information about flooding, visit www.FloodSmart.gov and www.NevadaFloods.org.

Nevada Flood Awareness Week

By Courtney Walker, Carson Water Subconservancy District

It has been stated that often times droughts end in floods. With much of Nevada and California in severe drought and the predicted El Niño, it is important to be prepared. Nevada Flood Awareness Week (FAW) was November 1-7, 2015 and was a great success this year! Several events were held throughout Nevada during Flood Awareness Week to raise awareness on how to be prepared before, during, and after a flood; how to sign up for flood insurance; and where to learn if your property is in a flood prone area.

FAW focused on reaching adults at community events and children in public and private schools. Events were well attended and were held in Reno, Carson City, Gardnerville, Yerington, Fallon, Battle Mountain, and Elko. Billboards were placed along major highways in Nevada, including Highway 395, Highway 50, and Interstate 80.



Students explore the flood model in Battle Mountain.
Photo by DCNR



Flood Awareness Week community event in Yerington, NV.
Photo by DCNR

rain-on-snow events or summer thunderstorms. The Carson River is unique; there is extremely limited upstream water storage capacity or capability, and there are no flood control structures within the river. However, open floodplains, especially in Hope Valley, Carson Valley, and Dayton Valley, provide our watershed with the best riverine flood control mechanisms available!

Newspaper, radio, and television advertisements were aired in English and Spanish.

CWSD staff participated on the FAW planning committee again this year. The committee's mission is to create flood resilient communities in Nevada that encourage protection of life, property, water quality, environmental values, and the preservation of natural floodplain functions.

It's Flood Season! Nevada Floods. Are You Prepared?

Flooding in the Carson River Watershed is a natural process that occurs on a regular basis. It is also one of the most devastating and costly natural events that our communities face. Serious flooding can happen approximately every 10-20 years and often occurs after

Know Your Flood Risk!

Find out if you live in a flood zone by going to www.Floodtools.com or www.NevadaFloods.org.

Be Prepared!

Homeowner's insurance does NOT cover floods! Purchase flood insurance if you live in a flood prone area. To find out more about the National Flood Insurance Program, go to www.floodsmart.gov.

Get Involved in Your Community!

Nevada Flood Awareness Week occurs annually in November. Visit www.NevadaFloods.org for more information and resources.

Community-wide Benefits of Local Flood Mitigation Projects

By Stephanie Hicks, RO Anderson

Some scientists say that this year's El Niño could be among the most powerful on record. While the potential of above-average precipitation will be welcome drought relief, it also brings concerns about the flooding potential in the region. In response to these predictions, months ago many communities in northern Nevada started removing debris, vegetation, and sediment from the river beds and beneath bridges to increase flow capacities. Others have initiated flood emergency planning efforts to collaborate on response strategies and apply resources effectively. These planning efforts are critical for timely and effective responses to flooding events. An equally important activity is the planning and construction of flood mitigation projects. When completed, these projects not only mitigate future flood impacts and reduce response and recovery efforts for specific neighborhoods, they also provide significant community-wide benefits.

The Carson Water Subconservancy District initiated the Carson River Watershed RiskMAP Discovery Project in March 2012, providing an opportunity for watershed-wide discussions about increasing resilience to flooding and other natural hazards. During this process, the six counties within the watershed prioritized a list of needed flood mapping, risk assessment, and mitigation projects culminating in a Discovery Report. The flood risk information contained in the report is being used to enhance local hazard mitigation plans, make informed decisions to improve resilience after flooding, protect beneficial functions of floodplains, and raise awareness about local flood risks. Since being adopted, several identified mitigation projects have been selected to receive FEMA funding for feasibility-level analysis of needed improvements to reduce flood damage in the specified areas (See Page 5).

Local flood mitigation projects bring value to a neighborhood by reducing the potential for loss of life and property, build community resilience, and protect the public health and safety. Flood mitigation projects also provide region-wide benefits such as protecting county maintained roads, critical facilities, and infrastructure. Localized flood mitigation projects serve to reduce and, in some cases, eliminate costs of flood response and recovery efforts. They can minimize unforeseen expenses on local government budgets, thereby benefitting all tax payers. The preservation of private property values and the local tax base are other side benefits.

Completion of localized flood mitigation projects can also serve to improve a participating county's overall FEMA National Flood Insurance Program (NFIP) Community Rating System (CRS) score. Residents who directly benefit from flood mitigation projects can see significant discounts in their flood insurance premiums due to reduced flooding impacts, but local flood mitigation projects help all residents in the NFIP as the projects may improve a county's overall community rating score, thus further reducing NFIP insurance premiums. Each level of improvement in a county's NFIP CRS score produces a five percent discount on flood insurance premiums for all properties in Special Flood Hazard Areas. Depending on the number of flood mitigation projects a county implements and the number of CRS credits awarded for each, residents may see decreases in their flood insurance premiums. At a time when the NFIP is implementing annual rate increases and surcharges, every little discount helps.

Carson City,
Douglas and
Storey Counties
currently
participate in the
National Flood
Insurance
Program
Community
Rating System

Planning, preparing for, and mitigating flood impacts before a disaster places a county in a better position to implement and expedite flood response and recovery. Effective mitigation of flood impacts can save residents and tax payers money and provide peace of mind. A community that is prepared may see the potential of an El Niño season as an opportunity rather than a threat.

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showing that strong El Niño episodes correlate to a reduced risk of major river floods along the Carson and Truckee Rivers. But that does not mean a zero risk since each El Niño behaves differently. Example -- there's been an anomalously warm "blob" of water right off the west coast which may make Pacific storms this winter behave differently. They could perhaps give atmospheric rivers more moisture and warmth that would lead to heavier precipitation totals, higher snow levels, and increased flooding risk.

In the end, my best confidence is in saying we are highly unlikely to have another super dry winter like the last two. So we'll probably have more storms, more snow days, more rainy days, and more water flow in the Carson River compared to last winter. But beyond that, in terms predicting specific snowpack, runoff, and flooding potentials, you might as well take a roll of the dice.

Designing Flood Relief using Sheckler Reservoir

By Rob Anderson, RO Anderson

The City of Fallon and unincorporated Churchill County are located downstream from Lahontan Reservoir. Flooding can occur downstream when the reservoir is near capacity and a significant hydrologic event occurs simultaneously upstream in the Carson River watershed. This can be the result of flood water releases necessary to protect the dam structure, as well as the City of Fallon and unincorporated Churchill County. The most recent high runoff events occurred in 1983, 1986, 1996, and 1997. These events filled Lahontan Reservoir and Carson River Diversion Dam upstream of the City of Fallon. The resultant water releases from the dam, as well as spillway flows, caused flood damage to the county roads, private properties, and residences.



V-Line Canal approximately 2.3 miles downstream of Carson River Diversion Dam

The Carson Water Subconservancy District (CWSD), with the assistance of R.O. Anderson Engineering, Inc., recently utilized FEMA grant funding to investigate the technical and economic feasibility of mitigating flood risk downstream of the Lahontan Dam by diverting some flood flows overland toward Sheckler Reservoir. The initial feasibility-level engineering study evaluated several alternative routes to divert flood flows, and results were presented to stakeholders including the Truckee Carson Irrigation District (TCID), City of Fallon, Churchill County, and CWSD.

A preferred alternative was chosen that meets the flood control goals and objectives of the stakeholders and is economically feasible. This alternative plan utilizes the existing V-Line Canal in conjunction with two new lateral weirs built on the right banks of the canal approximately 2.3 miles downstream from the Carson River Diversion Dam, to divert flood flows toward Sheckler Reservoir. The crest of the proposed lateral weirs on the right bank of V-Line Canal can be set so only excess floodwater is spilled over the lateral weirs, assuring availability of allocated water to the irrigation fields downstream. The total cost of the preferred flood diversion alternative is approximately \$682,250, which includes a 25% contingency.

CWSD staff were instrumental in bringing key stakeholders together to find a mutually acceptable and feasible alternative to divert excess flood flows toward Sheckler Reservoir, protecting downstream properties in Fallon and unincorporated Churchill County from the flood damages.

The 27-mile long V-Line Canal was built in early 1900s as part of Newlands Project. It originates at the Carson Diversion Dam and irrigates agricultural fields on the south side of the Carson River.

State Approves Funding for Removal of Debris in River Beds

By Ed James, Carson Water Subconservancy District

Due to the drought and the lack of funding to date, many rivers throughout Nevada have seen large increases in vegetation and sand bars forming which can hinder large flows and potentially increase flood damages. With the development of a very strong El Niño, communities along the various rivers in Nevada expressed their concerns about potential flooding to the State of Nevada's Board of Examiners and Legislative Interim Finance Committee in mid-December. Based on their efforts, \$200,000 was reinstated in the Nevada clearing and snagging account (NRS 532.220).



This woody debris in the East Fork Carson River holds back river flows. Photo by Mike Hayes, Carson Valley Conservation District.

In the 1970s, the State of Nevada established a Channel Clearing Account to help maintain navigable waterways and to assist conservation districts and local governments with funding to:

- stabilize and restore river banks to reduce erosion,
- clear debris such as fallen trees, and
- remove sand bars to reduce the future risk of flooding.

The State of Nevada claims ownership of the bed and banks (to the mean high water mark) of navigable waters.



Large downed trees in Dayton Valley. Photo by Rob Holley, Dayton Valley Conservation District.

After the 1997 flood, the funding amount in the account was increased from \$25,000 to \$250,000. However, in 2009, with the downturn in the economy, funding for this account was removed from the State budget.

After 2009, the conservation districts and the Carson Water Subconservancy District (CWSD) have met with the State Engineer to discuss the need to reinstate these funds. Despite some success during the 2015 legislative session with Assemblywoman Robin Titus introducing legislative bill AB 430, the bill did not get out of committee.

With the El Niño on the horizon, concerns spurred communities to request the State to fund the Clearing and Snagging Account once again. At their December 2015 meeting, the Board of Examiners and the legislative Interim Finance Committee voted to place \$200,000 into the State's Clearing and Snagging account. These funds will be administered by the Nevada Division of Water Resources. Conservation districts and local government entities can apply for grant funds (50% match required) to conduct clearing and snagging projects. The Dayton Valley and Carson Valley Conservation Districts plan to submit proposals, with CWSD assisting with matching funds. Proposals will consider multiple issues including flood mitigation, recreation, habitat, and water quality protection.



Crews remove woody debris in the Carson River in Churchill County. Photo by Jackie Bogdanowicz, Lahontan and Stillwater Conservation Districts.

Clear Creek Drainage Work Completed

By Meg Ragonese, Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) has substantially completed a project to enhance storm drainage, help preserve water quality, and reduce erosion on U.S. 50 in south Carson City. The project replaced more than 50 storm drains and drop inlets, as well as enhanced roadside slopes and curbs and gutters on U.S. 50 from the South Carson Street/Spooner junction to Tahoe Golf Club Drive, approximately four and a half miles up U.S. Highway 50.

Multiple drainage channels from the highway were improved with additional drainage pipes and rock work to reduce erosion. Some of the drainage systems were originally constructed when the highway was built more than 50 years ago. The drainage systems carry storm water into the Clear Creek Watershed on the south side of U.S. 50. The project also enhances roadway safety by replacing many storm grates from near the travel lanes, providing a smoother roadway surface and reducing potential roadway flooding risk. Minor finishing work will continue to be completed on the project.



One system to improve the stormwater drainage from Highway 50 on Spooner Summit. Photo provided by NDOT.



Clear Creek near Fuji Park in Carson City.
Photo provided by CWSD.

The approximately \$1.2 million project by contractor MKD Construction started in June. The improvements are one part of the Clear Creek Erosion Control Program, a cooperative agreement between NDOT and the Carson Valley Conservation District. Since 2005, NDOT has dedicated more than \$4 million to enhance U.S. 50 drainage into the Clear Creek Watershed, with approximately 20,000 feet of drainages downstream of U.S. 50 improved with earth and rock work to reduce erosion. Future projects are planned to further reduce erosion and preserve water quality in the upper Clear Creek Watershed.

NDOT has long been dedicated to storm water management. The department uses best management practices to reduce the amount of water quality impacts from construction projects including installing water quality systems to efficiently benefit the clarity of roadside runoff. Further information is available at www.nevadadot.com/stormwater. *Editors Note: Clear Creek flows year round into the Carson River. This project is beneficial to the Clear Creek Watershed and the broader Carson River Watershed!*

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January 13-14, 2016: Winter Weeds Conference; Ely, NV.
Register now, space is limited!
www.envlc.org

January 30, 2016: GreenPower Annual Teacher Training; Reno, NV. Teachers are eligible for 0.5 in-service credit. <http://greenpower.dri.edu/events/item/5041-exploring-steam-education-through-resilience-and-design>

February 18-21, 2016: Eagles and Agriculture in Carson Valley, NV; Minden, NV. www.carsonvalleynv.org/pages/EAGLESAGI/

February 29-March 3, 2016: Nevada Water Resources Association Annual Conference; Las Vegas, NV. www.nvwra.org/2016-annual-conference-week

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<https://www.facebook.com/carsonriver>



This newsletter has been developed in part with Clean Water Act 319 (h) funds from the Nevada Division of Environmental Protection.



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**

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